Project Summary

US Army Engineer
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Waterways Experiment Station

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Penetrometer Microwell Subsurface Fluid Sampling System

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Technology: The penetrometer MicroWell was designed and developed under the Waterways Experiment Station (WES) Site Characterization and Analysis Penetrometer System (SCAPS) Program sponsored by the U.S. Army Environmental Center (AEC) to monitor and obtain samples of subterranean water contamination. A preassembled well casing, well screen with filter sand, and clay seal are placed inside a penetrometer rod. The MicroWell is pushed to depth and the penetrometer rod retracted leaving an installed MicroWell complete with sand filter and clay seal.

Benefits: A MicroWell installation conducted using a single penetration contributes to a faster and more economical well installation during the site characterization and screening phase. Contaminant plume monitoring and water sampling are obtained with minimal labor, equipment requirements, and exposure.

Applications: The MicroWell is installed using penetrometer equipment and is used for monitoring and obtaining water samples for contaminate analysis.

Capabilities: The MicroWell provides functional capabilities similar to full-sized monitoring wells. Currently, the maximum installation depth is 75 ft.

Limitations: Applications are limited to normally consolidated soils, and are not appropriate for consolidation/cemented materials, cobbles, or rocky strata. Additionally, use is not applicable for steep slopes or wetland areas due to cone penetrometer truck mobility limitations.

Requirements: The MicroWell requires a direct-push (cone penetrometer) vehicle equipped with pushpipe rods and equipment.

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